JAN 17 1944

Gas Journal

LIGHT - HEAT - POWER - BY-PRODUCTS

Vol. 242. 95th Year. LONDON, DECEMBER 29, 1943. No. 4206. Price 1/-

Registered as a Newspaper.

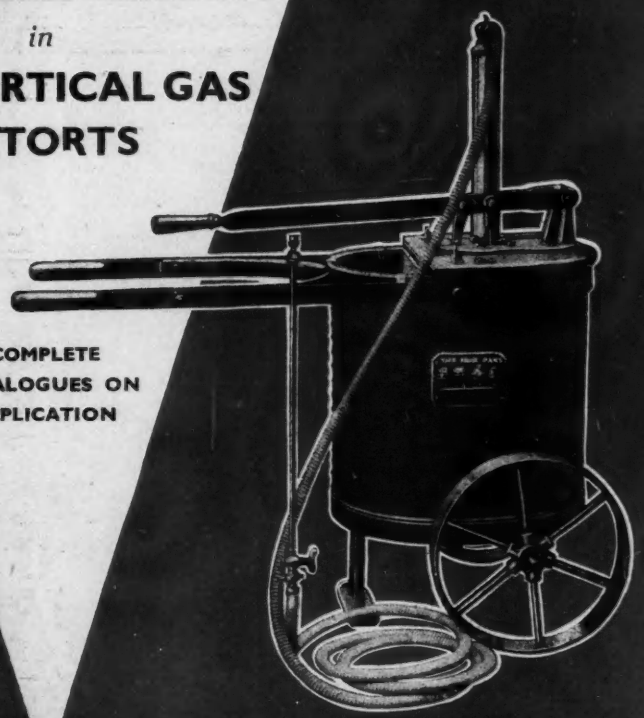
FOUR OAKS SPRAYERS

for

LIMEWASHING AND LIQUID CEMENT SPRAYING

in

HOT VERTICAL GAS RETORTS



REGISTERED TRADE MARK

THE FOUR OAKS

COMPLETE CATALOGUES ON APPLICATION

The "FOUR OAKS" Gold Medal "Bridgwater" Pattern

The special feature of this pump is that the pump bucket works entirely outside the liquid.

18 Gallons, £20 2 6

Other patterns of smaller capacity and lower prices.

Above price plus 10% advance

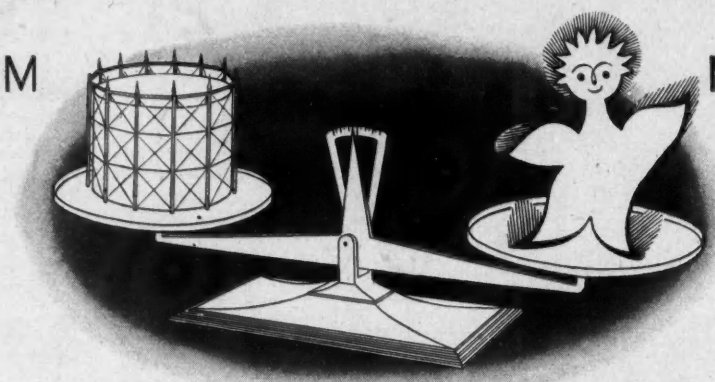
THE 'FOUR OAKS' SPRAYING MACHINE CO.

FOUR OAKS WORKS, FOUR OAKS, BIRMINGHAM

TELEGRAPHIC ADDRESS:- SPRAYERS, FOUR OAKS. TELEPHONE:- No. 305, FOUR OAKS

Owing to the National Emergency, all prices are subject to the conditions prevailing at the time orders are received.

MINIMUM FUEL



MAXIMUM USE

OXLEY METAL SURGERY

keeps old gasholders gas tight!

The great need for economy in fuel focuses attention upon the need for adequate maintenance of gasholders to prevent loss of gas. Riveted gasholders tend to leak around loose rivets and through lap joints. Regular inspection will detect these faults—Oxley Metal Surgery can make old gasholders gas-tight and, what is equally important, the work in many cases can be executed with the gasholder in commission.

OXLEY
ENGINEERING CO. LTD.

HUNSLET, LEEDS 10
Tel.: 27468 (3 lines). 'Grams: "Oxbros, Leeds."

London Office: Winchester House, Old Broad St., E.C.2. *Telephone: London Wall 3731. 'Grams: "Asbengpro, Stock, London."*

W. 23.

Self-Contained

Here is the Pegson Road Ripper dealing with a tar macadam surface cheaply, quickly and with efficiency. The big illustration has a section cut away to show the simplicity of the internal mechanism.

This Pegson Road Ripper needs no compressor or pipe line. It will deliver approximately 1,500 powerful blows per minute. It runs on Pool petrol, at a fuel and oil cost of but threepence an hour. It is fitted with press-button control, automatic lubrication, and weighs but 78 lb. The Pegson Road Ripper is an all-purpose tool that can be handled by unskilled labour. It will do any job of concrete demolition, road ripping, clay digging or light pile driving. It will take any tool with a 1⅛-inch hexagonal shank. It is the handiest of all rippers on the market.

PEGSON Ltd., Coalville, LEICS.

CONTENTS

Annual Review of 1943

Talk and Achievement ... 806
National Gas Council ... 806
Coal and Manpower ... 806
The Planning Report ... 807
Legislation ... 807
The Institution ... 808
Education ... 808
The Gas Research Board ... 808
S.B.G.I. ... 809
Planning the Change-Over ... 809
Co-operation without Interference ... 809
B.C.G.A. ... 810
Display Publicity ... 810
Special Contacts ... 810
Women's Gas Council ... 811
Technical Aspects ... 811
Coke ... 812
Product Ammonia and Sulphur ... 812
Tar and Tar Products ... 815
Stocks and Shares ... 816
Obituary ... 816
Obituary ... 821
Letter to the Editor ... 821
Diary ... 821
Post-War Planning ... 821
Gas Products Prices ... 822
Gas Stocks and Shares ... 822

THIS WEEK'S ADVERTISERS

	PAGE
Alder & Mackay, Ltd.	817
Averill, C. R., Ltd.	S6
Bale & Church, Ltd.	824
Blakeley, Firth, Sons & Co., Ltd.	824
Bratt Colbran, Ltd.	799
Broadbent, J. C., & Co., Ltd.	823
British Flint & Cerium Manufacturers, Ltd.	S2
British Ropes, Ltd.	802
Chaseside Engineering Co., Ltd.	S3
Cochran & Co. (Annan), Ltd.	797
Curtis, A. L.	804
Dempster, Robert, & Sons, Ltd.	824
Eagle Range & Grate Co., Ltd.	796
Ether, Ltd.	S6
Evans, Joseph, & Sons (Wolverhampton), Ltd.	Cover IV
Foamite, Ltd.	796
Foster Bros., Ltd.	S4
"Four Oaks" Spraying Machine Co.	Cover I
Gas Meter Co., Ltd.	Cover IV
Gas Purification and Chemical Company, Ltd.	824
Gibbons Bros., Ltd.	800
Gill's Pressure Castings	804
Goodall, Clayton & Co., Ltd.	S4
Glover, George, & Co., Ltd.	793
Grant, David, & Co.	794
Green & Boulding, Ltd.	824
Greening, N., & Sons, Ltd.	Cover III
Griffiths Bros., & Co. (London), Ltd.	Cover III
Harrisons (London), Ltd.	824
Harvey, G. A., & Co. (London), Ltd.	795
Holmes, W. C., & Co., Ltd.	S1
Hyde, Silas, Ltd.	S2
Keith Blackman, Ltd.	S8
Kenyon, T. H., & Sons, Ltd.	S5
King, Geo. W., Ltd.	S5
King's Patent Agency, Ltd.	823
London Electric Firm, The	823
Main, R. & A., Ltd.	820
Mewburn, Ellis & Co.	823
Ministry of War Transport	801
Mitchell, H., & Co.	823
Morton, Joseph, Ltd.	804
Newton Chambers & Co., Ltd.	814
Oxley Engineering Co., Ltd.	Cover II
Pegson, Ltd.	Cover II
Photostat, Ltd.	794
Power-Gas Corporation, Ltd.	798
Pulsometer Engineering Co., Ltd.	Cover IV
Radiant Heating, Ltd.	795
Radiation, Ltd.	818, 819
Reavell & Co., Ltd.	S5
Reinforced Concrete Association, Ltd.	S7
Salter, T. E., Ltd.	805
Sawer & Purves, Ltd.	817
Siebe, Gorman & Co., Ltd.	823
Slingsby, Walter, & Co., Ltd.	823
Spencer (Melksham), Ltd.	804
Stanton Ironworks, Ltd.	824
Strachan & Henshaw, Ltd.	793
Sutcliffe, Speakman & Co., Ltd.	802
Technological Institution of Great Britain	824
Thomas & Bishop, Ltd.	822
Trotter, Haines & Corbett, Ltd.	823
Turbine Furnace Co., Ltd.	823
Underpressure Engineering Co., Ltd.	S4
Whessoe Foundry & Engineering Co., Ltd.	803
Winn & Coales, Ltd.	S4
Woodall-Duckham Co.	813
Trade Cards	822
Appointments Vacant	823, 824
Educational	824
Patents	823
Plant, &c.	824
Plant, &c., For Sale and Wanted	824

The "Journal" and "Salesman" Office is at 51, High Street, Esher, Surrey. 'Phone: Esher 1142.

Communications addressed to Bolt Court have to be forwarded, and this causes delay.

VENTILATE AS YOU HEAT
The most efficient way of using GAS for HEATING BUILDINGS is by means of a
VOLEX
GAS HEATER.
T.E. SALTER, LTD.
Bloomfield Foundry,
Tipton, Staffs,
Telephone: 1657-8, Tipton.
Telegrams: "Salter, Bloomfield, Tipton."
T.E. S LTD
If your Local Gas Authority cannot supply Gas,
we can offer a Coke-Fired Heater.
T.E. S LTD

GAS JOURNAL, DEC. 29, 1943
VOL. 242 95th YEAR No. 4206

1943

Talk and Achievement

BEFORE particularizing on the various aspects of the Gas Industry's activities during a year each day of which has seen great increase in the strength and might of the Allies, and has sped us, through unremitting work and greater common understanding, to the one certain climax of this unparalleled war, we will take the briefest of objective and dispassionate glances at the Industry as it appears to have interpreted itself by thought and action. First, thought. There has, in all faith, been thinking in plenty. At times we have been reminded of those quaint and charming figures of man and (presumably) wife who, according to weather conditions, come out from or recede into a little hut; at other times of the Eastern philosopher's comments, so poetically translated by FitzGerald, concerning his frequentations to doctors and saints to hear great argument about it and about—alas, only to find himself coming out from the same door as in he went. The Gas Industry seems to have been thinking in circles, and somewhat tangentially at that, leaving in the wake of its thoughts a ragged and rather nebulous outline of a circumference. Within the area so transcribed there has, we suggest, been a gloomy rumbling of discontent, a greyish cloud marked from time to time by bursts of political petulance. At the close of 1943 this clouded confusion of opinion—opinion fortunately not pent-up for want of wordy expression—has not been dissipated by any leading light. Our news service, which covers tolerably well in the circumstances England, Scotland, and Wales, and Ireland (both North and South), has provided us with sufficient information to indicate how much energy is being expended by different factions within the Industry—and we think "factions" is apt enough designation—to consolidate themselves, to preserve if not, indeed, to magnify their dignity, to entrench themselves firmly, with all the provisions on which they can lay hands, within the defensive parapet of *status quo*. Nor can we leave aside, discussing, as we are, the matter entirely dispassionately, the personal elements within the Industry which (in all good faith, no doubt) seek to disparage achievement—for example, in integration of supply—on the grounds that their pet methods would, had they been put into practice, have proved infinitely more successful. "Had they been put into practice." This clause is, perhaps, overweening. We should hesitate to evaluate the extent to which, throughout the past twelve months, the component parts of the Gas Industry, private and municipal enterprise, executive, technical man, and manual worker, have been drawn together in common cause for common purpose.

Are we gloomy? Not in the least. If disperse, if tangential, if at times blurred in aim and in the circumstances ludicrously parochial, at least there has been activity in the Industry; and it is good to see, at the dawn of 1944, an industry reaction which needs no foreign catalyst—an Industry which, if at times naturally peevish, is undoubtedly healthy organically. That in closer unity it could, at least to the outside world, embellish its organically sound constitution seems to us to call for little comment. But in all conscience it displays virility, if not cohesion. It is an Industry which, day in, day out, and throughout the twenty-four hours, without a moment's respite, simply *has* to serve the community. It has not failed the wartime demands made on it; sometimes under much stress and difficulty, and not without anxiety, it has met and often exceeded demand. Whatever the range of the tints of the political views of those composing it, it has answered unmistakably, in gaseous if not in concrete form, the call for continuous, unfailing service—for therms, therms, and yet more therms. It has talked quite a deal, but it has acted too. The proof is in enemy territory; it is also in the homes of the people in our own country. That is the Industry's real achievement.

At the close of 1943 there seems to us little cause for gloom, albeit there is reason for clearer and, shall we say, more *companionate* thinking. It strikes us that never before has the Industry been so well served technically—and the Gas Industry is a technical, a chemical industry, and must never be a political toy. It provides a huge quantity of useful heat, the while conserving coal. If the heat generated in discussing its future is, as it seems to us, on the increase, at least we can be thankful that the heat needed to convert coal into gas and coke and all the other products is on the decrease. This decrease has been one of the most important features of the past year as far as our Industry is concerned. The result of inspired work, it will, we are sure, lead to further inspiration, and may tend (or are we over-optimistic?) to a measure of healthy boredom with too much talk about it and about, coupled only with feeble and impoverished action and small achievement.

National Gas Council

IN time to come the year 1943 will almost certainly be looked back upon as one of the most important and critical in the annals of the Gas Industry. Not only has it had to face wartime problems of ever-increasing difficulty and complexity, but, looking to the future, it has had to plan both for its internal organization, and for the sphere which it will rightfully occupy in that new world to which all look forward after the war.

In a short review of the political, legal and other aspects of the Gas Industry during a particularly busy year, it is impossible to do more than give a very general picture of what has been accomplished.

Indeed there is only space to mention some of the more important matters, for it must be remembered that to the ordinary work of the National Gas Council and the bodies with which it co-operates—work in itself sufficiently voluminous—has been added a mass of additional matter, arising from wartime conditions, which increases and tends to become more difficult year by year. The Industry is affected in the whole range of its activities. Restrictions have had to be observed, supply difficulties dealt with, unexpected situations met, and the future as far as possible provided for.

In consequence the burden on all those connected with the Industry, and particularly on those who are members of the many Committees dealing with specific subjects, is extremely heavy. It is therefore a high tribute to the loyalty of all concerned to record that they have borne that burden uncomplainingly, and a testimony to their skill and care that they have been able to make a most important contribution to the national effort, the full extent of which cannot yet be told.

Coal and Manpower

OF the many wartime problems, those of coal supply and manpower have been constantly in the forefront. As in the past, the coal situation in general has been handled by the Conjoint Conference of Public Utility Associations, and the Industry has good cause to be grateful to that body, and in particular to its Public Utilities Coal Committee —now, in recognition of its services, an official committee of the Ministry of Fuel and Power—which has done and continues to do admirable work.

At the beginning of the year the coal-stocking position was not as good as the Committee had hoped, but due in part to the loyal support given by undertakings to the Government's Fuel Economy Campaign, and in part to the mildness of the winter months, a somewhat anxious time was successfully negotiated. Had coal output maintained its former level earlier apprehensions would not have been revived, but owing to a variety of causes the serious falling off in production which unfortunately took place in later months, together with increased demands for export coal to meet military requirements, again rendered the position acute, particularly as the consumption both of gas and electricity tended to increase. Thus it is that the position of many gas undertakings in regard to coal stocks is now less satisfactory than had been hoped. On the other hand, there is no reason to suppose that, with the help of the Public Utilities Coal Committee and the

co-operation of the public, the Gas Industry will, generally speaking, be prevented, due to the coal situation, from fulfilling their obligations to their industrial and domestic consumers.

Many other aspects of the coal situation, unsatisfactory from the point of view of consumers, have demanded the close attention of the Coal Committee, and in matters which the Gas Industry is particularly concerned its efforts have been supported by direct intervention with the Ministry on the part of the National Gas Council. Among these the lack of any method of fixing coal prices which would afford some measure of protection to consumers has been the subject of continuous representation by the Conjoint Conference. Deprived of impartial consideration of their grievances owing to the suppression of the Committees of Investigation and the Appeal Tribunal which were operating before the war, consumers have to pay prices, apparently fixed in an entirely arbitrary fashion in many cases, bearing little or no relation to the quality of the coal supplied. Suggestions made by the Ministry for remedying a situation, the existence of which is not denied, have proved unacceptable, and the Conference is persevering in its efforts to secure more equitable treatment for its members.

The manpower shortage, due to the insistent call for able-bodied men for the Forces, also causes anxiety, and it is only recently that the Government has appeared to realize the immense importance to the war effort of ensuring a sufficient labour force at gas-works. Even so, it has not been able to afford much help, and in these circumstances the Industry, with official approval, has sought, not without success, to recruit labour from outside the United Kingdom.

Another difficulty relating to coal has happily been satisfactorily settled, for the long-drawn-out negotiations between the Conjoint Conference and the Railway Companies as to the operation of the Demurrage Order, which resulted first in an agreement as to the basis on which outstanding claims should be settled, have now led to the drawing up of a standage scheme which has been approved by both parties and confirmed by the Ministry of Fuel and Power. The scheme is open to all undertakings having private sidings, and its adoption is optional. Results have, however, shown clearly that in operation it is much more simple and satisfactory in the vast majority of cases than the former system of claims made in respect of demurrage on individual wagons.

The close liaison between the Government and the Gas Industry resulting from the establishment of a strong Directorate of Gas Supply, and from the subsequent creation of the Ministry of Fuel and Power and the absorption therein of the Directorate, was imperilled early in the year by the resignation of the Director, Dr. E. W. Smith, whose occupation of the post had inspired in the Industry a new confidence in the administration, and by the subsequent disbanding of the Directorate. Suggestions were at once made to the Minister that machinery should be created whereby regular and close consultations between him and the Industry might be ensured. The Minister having approved the setting up of a Committee of not more than five members who would be able to give him advice on any gas matter of importance, steps were taken by the National Gas Council to secure the election, through the médium of the Management Committees of the District Executive Boards, of a thoroughly representative Committee. The Committee so elected has been in regular touch with the Ministry and has done much useful work.

The Planning Report

ANOTHER matter of outstanding importance was the presentation in October to the Minister of the Report prepared by the Post-war Planning Committee on behalf of the British Gas Federation. A Report which deals both with the post-war planning and reconstruction of the Gas Industry and with the recasting of the existing structure of its national bodies, could scarcely be expected to meet with unanimous acceptance by the very large number of those to whom its contents were of vital importance, but it is a high tribute to the skill and care with which the Drafting Committee did its work that it secured the consent of an overwhelming majority to submit the Report to the Minister.

Moreover, its publication, after presentation to the Minister, evoked a very large measure of approval from the Press and public. The *Times*, in a leading article, referred to it as a notable contribution to the discussion of industrial reconstruction, and said that the Federation's closely argued proposals for planning the Industry's future set a standard of thinking which few similar documents had yet attained. Other organs of the Press referred, as did *The Times*, to special features of the Report, including the proposal to set up a British Gas Association which would supersede the existing national organizations and act as the Parliament of the Industry, having as one of its many functions the integration of the Industry. Another recommendation which was favourably noticed was that a National Fuel Advisory Council should be set up by the Minister of Fuel and Power to facilitate the elimination of wasteful competition between the fuel industries, and the substitution, in the national interest, of co-operation among them.

Save that the Report was not to shirk dealing with the political issues involved, the Planning Committee received only the most general indication from the Government as to the line which they should follow. Information about the policy in mind for the future location of industry and of population was not forthcoming, and anything touching the policy to be adopted in regard to fuel in general was very scanty. On the political aspect, the Report takes the view that there is nothing to indicate that the needs of the Industry demand recourse to nationalization. On the contrary, it voices the opinion that nationalization would create controversy at a time when co-operation and development are especially desirable, would necessitate the creation of a State monopoly of all fuels, could not be introduced for some years, and would constitute the substitution of an experiment which could not be undone, for the successful rendering of a public service by company and municipal enterprise appropriately controlled.

No doubt the Report is now receiving close attention from the Ministry, but so far the Minister has made no pronouncement in regard to it, and in the meantime at the request of the Ministry a representative Committee of the National Gas Council is preparing a report on the changes in existing gas legislation which are necessary to bring it up to date.

Legislation

DURING the year, while there has been no Act of Parliament dealing solely with gas, there has been no cessation of the flow of legislative measures—chiefly in the form of Orders—many of which affected gas interests in greater or less degree. Examples are to be found in the series of Orders designed to secure fuel economy, including the highly detailed Coal Distribution Order dated August, 1943, which consolidates and amends earlier Fuel and Lighting Registration and Distribution Orders, and also various earlier Directions, and also the Fuel and Power (Information) Order, by which the Minister of Fuel and Power is authorized to require miscellaneous information to be furnished by, *inter alia*, gas, water, and electricity undertakings. Another series deals with Hire Purchase. The Hire Purchase (Control) Order which came into force on March 1, 1943, proved so unsatisfactory, both from the point of view of the Gas Industry and of others, that, as the result of representations to the Board of Trade, it was withdrawn, and the Hire Purchase and Credit Sale Agreements (Control) Order promulgated in its place. The latter was no sooner issued than it, too, had to be made the subject of representations to officials of the Board of Trade, who admitted that that complaint was justified.

Frequent changes of the kind indicated, while perhaps inevitable in wartime, render necessary a close scrutiny of every Order which appears, and the task is made more difficult by the fact that in many cases earlier Orders have to be referred to.

A Direction relating only to Gas Undertakings which, though promulgated in December, 1942, did not become operative till January this year, is the Benzole Recovery Plant General Direction given by the Minister of Fuel and Power. It made it compulsory for all undertakers to cause all gas produced by the carbonization of coal to be treated through benzole recovery plant in such a way as to extract to the fullest capacity of the plant the crude benzole in the gas so as to yield the maximum amount of toluene therefrom. The implications of the Direction are obvious. Another by-product in the production and use of which the Government has taken a wartime interest is coke. Recognizing its value as an alternative to coal, the Ministry of Fuel and Power has, in conjunction with the National Federation of Coke Associations, taken steps to encourage its use where possible as a substitute for coal.

The only Acts passed during the year which need be mentioned are the Agricultural (Miscellaneous Provisions) Act and the Town and Country Planning Act. The first empowers the Minister of Agriculture to acquire land compulsorily for the execution of drainage works, but contains no protective provision for the land of public utility undertakings similar to that in the Land Drainage Act, 1930. On representations being made an assurance was obtained from the Minister that his power would be operative only during the war, and that he would not exercise it in respect of land belonging to a public utility without first consulting the appropriate Government Department. The purpose of the Town and Country Planning Act is to extend Planning Control to all areas in England and Wales which are not already subject to it, and to strengthen the powers of control of interim development.

While on the one hand there is legislation in profusion, there is on the other a conspicuous failure to produce it in one instance. The

measure dealing with War Damage to Public Utilities, formally promised and long awaited, has not yet made its appearance. Enquiries addressed by the Conjoint Conference to the Treasury have brought no definite reply as to when it may be expected, and further representations are being made.

A feature of the year has been the large number of Committees carrying out specific work. Some have already been mentioned, and in addition there were those dealing with many of the technical aspects of post-war planning. Another recently formed by the Central Executive Board is a standing committee to deal with the special interests of those purchasing coke oven gas, the Committee consisting of purchasers of a substantial quantity.

The Institution

THE year just closing has been one of even wider and more intense activity for the Institution than the last. Technical assistance within the Gas Industry itself, as well as collaboration with Government Departments in the national war effort and in the planning of post-war amenities, have been considerably extended, and have made heavy demands upon the time and energies of Institution members. In addition to those serving on the various Committees of the Institution, whose interests and keenness are not to be depressed by the difficulties and discomforts of travelling, there are many members serving the Government in war-time positions in a variety of Departments. One hundred and three members of the Institution are serving in H.M. Forces, and three are known to have given their life on active service.

During the year the Gas Engineering Advisory Boards, which a year ago were just commencing to function in all Regions, have become well established. Their primary objective is to assist the national drive for ever greater fuel economy by reviewing periodically the operating efficiencies of gas-works in their Region, and by affording advice and assistance to those at which it would appear that fuel economy could be secured. Working with great enthusiasm in an atmosphere of mutual trust and good will, the Boards can already point to material economies in coal and a general upward trend in fuel efficiencies, in spite of the many difficulties besetting gas undertakings in wartime. Their policy and problems are reviewed periodically by a Co-ordinating Committee, consisting of the Chairman and Secretary of each Board together with the senior members of the Institution Council, which also meets the Director and other members of the Gas and Electricity Division of the Ministry of Fuel and Power to discuss the difficulties and broad achievements of the scheme. A letter of appreciation of the work of the Boards has been received from the Minister of Fuel and Power.

While the creation of the Advisory Boards is probably the most important and far-reaching of recent developments brought about through the Institution, many other examples could be given of collaboration with Government Departments during the year, such as the compilation of a Register of Surplus Gas-Works Plant, matters relating to Civil Defence, Fires at Gas-Works, Ventilation of Retort Houses, Gasholders, &c. The booklet, *Notes on Town Gas for Air Raid Wardens*, of which over 100,000 copies have been supplied to gas undertakings and Civil Defence Authorities, has been revised and issued in a second edition.

In the field of planning for the future the Institution has not only participated in the work of the Post-War Planning Committee of the British Gas Federation, but has been in constant and active collaboration with the Ministry of Works in regard to the installation and utilization of gas in post-war buildings. The Gas Installations Committee, which was appointed in 1942 at the request of the Ministry, has just submitted its detailed Report to the Minister.

At the same time as the Gas Installations Committee and other parallel Study Committees of the Ministry of Works have been active, a Codes of Practice Committee of the several interests involved has been set up, under the aegis of the Ministry, to prepare Codes of Practice in connexion with post-war buildings. At the request of this Committee, The Institution of Gas Engineers has appointed a Codes of Practice Sub-Committee to prepare Codes relating to the installation and utilization of gas, and these Codes are being drafted by panels of specialists dealing with such matters as service pipes, installation pipes, meters, lighting, water heating, space heating, flues, &c. The work is progressing rapidly, and it is understood that all approved Codes on these and other subjects will ultimately be published by the British Standards Institution.

The other technical Committees of the Institution, and particularly the Gas-Works Safety Rules Committee, Joint Lighting Committee, Liquor Effluents and Ammonia Committee, and Meters Committee, have also been actively engaged upon current problems and future developments in their respective spheres. They have prepared and sent to gas undertakings confidential memoranda on various technical matters.

The Institution held its 80th Annual General Meeting in London on June 9. It was again a one-day meeting, at which a series of six short Papers entitled "The Gas Industry: Considerations on Further Development" was presented and discussed. The attendance was greater than at any meeting since 1939, and the time available proved too short for full discussion of the Papers. The President's Luncheon was attended by a large number of distinguished guests, the principal guest being the Minister of Fuel and Power. The retiring President was Dr. E. V. Evans, O.B.E., F.I.C., who was succeeded in office by Mr. James Jamieson, the first President from north of the Border since 1911. The two Vice-Presidents are Mr. S. E. Whitehead, J.P., B.Sc., and Colonel C. M. Croft, D.L., J.P. The Birmingham Medal was awarded to Dr. E. W. Smith, C.B.E., now President of the Institute of Fuel, "by reason of his distinguished career as a Chartered Gas Engineer, and in recognition of his great services to the Gas Industry in many fields of its activity." The Institution Gold Medals were not awarded. The Institution Silver Medal was awarded to Mr. J. Corrigan (Brighouse), and the Bronze Medal to Mr. H. N. Dann (Blackburn).

The Council continues to maintain close collaboration with the District Gas Associations affiliated to the Institution, both through the District Members of Council and otherwise. During the current year an application has been received and accepted from the British Junior Gas Associations' Joint Council for affiliation to the Institution, and an elected representative of that Council now serves on the Council of the Institution.

Dr. W. E. le B. Diamond, who was Assistant Secretary of the Institution since 1937, has resigned this position on his appointment as General Manager of the British Plastics Federation. Mr. A. G. Higgins, M.Sc., has been appointed Assistant Secretary in his place.

Education

THE activities of the Gas Education Committee of the Institution are recorded in the 20th Report of the Committee. The number of examination candidates was slightly higher than in 1942, but was still far below the pre-war figure. This year, for the first time, a Home Paper has been included as an alternative to the Thesis in the Diploma Examination, and the innovation seems to have been welcomed, since the majority of the Diploma candidates took this paper.

Detailed consideration is being given to the Institution's Education Scheme in the post-war period, and considerable modifications in the Scheme are envisaged. These will bring the Scheme more closely into line with those of other professional Institutions and the requisite syllabuses and regulations are in preparation. The revised Scheme will not come into force until some time after the war, and appropriate notice of the change will be given.

Help and advice have been given to candidates serving in H.M. Forces concerning facilities available for the continuation of their studies, and contact is maintained with Naval, Army, and Air Force Authorities. Three candidates in the Services sat for the examinations of the Institution this year, including one serving overseas. Contact has also been maintained with the Prisoners of War Department of the British Red Cross Society, and arrangements have been made for sending books to prisoners of war who wish to study for the examinations of the Institution. One prisoner of war has made application to enter for the examinations, and question papers have been sent out to him through the British Red Cross Society.

Certificates are issued in appropriate cases to students seeking deferment of calling-up in order to enable them to complete their studies for the Higher Grade Examinations.

The Gas Research Board

IMPORTANT developments have taken place in the affairs of the Gas Research Board during the current year. On Jan. 1 the Board became officially associated with the Department of Scientific and Industrial Research, whereby it takes its place as a recognized, State-aided Research Association. The Department has appointed as its representatives on the Council of the Gas Research Board Professor Sir Lawrence Bragg, O.B.E., D.Sc., F.R.S., Professor C. G. Douglas, C.M.G., D.M., F.R.S., and Mr. R. O'F. Oakley, O.B.E. The Board is also a constituent member of the Standing Consultative Conference of fuel research organizations, appointed by the Department to review and co-ordinate their research programmes.

In June the Council appointed Dr. J. G. King, A.R.T.C., F.I.C.,

Superintendent of the Fuel Research Station, East Greenwich, as the first Director of the Board, and Dr. F. J. Dent, Research Chemist, Leeds, as a Joint Assistant Director. An Intelligence Officer has also been appointed. The programme of work of the Board and its plans for immediate development are going forward actively.

The work of the Board during the current year is reviewed in the 4th Report of the Council, and the particular investigations in the field of refractories are recorded in the 34th Report of the Refractory Materials Joint Committee, which is available also in an abridged form owing to the paper shortage. The researches upon the gasification of coal with hydrogen under pressure have reached a stage where the next step is the translation of the process to a larger scale. The erection of a semi-scale apparatus is nearing completion and experimental work on it should start early in 1944. The laboratory investigation of the catalytic synthesis of methane is approaching the stage of scale development on two lines and is showing considerable promise. A survey is being made of the sulphur compounds in gas produced from different coals in different types of plant, at the same time as the investigation of catalytic processes for the removal of such compounds to a low figure is advancing successfully. The application of liquefaction processes to coal gas with the multiple objects of purification, separation of olefines, and recovery of liquid methane is being watched by participation in a State-aided research.

The application of heating by radiation is being extended by fundamental studies of the character of the emissivity band in the infra-red obtained from different solids and the absorption characteristics of the materials to be treated. A delicate laboratory technique has been developed and is yielding valuable results. The work has, of course, a direct bearing on the application of infra-red radiation in gas-fired heating appliances, both for domestic use and in industrial processes.

Under its Director, who is well known to the Gas Industry and throughout the field of fuel research, it may be confidently anticipated that the activities of the Gas Research Board will see further important developments in the coming year.

S.B.G.I.

THE Society decided in the year under review to revert to more normal procedure and to hold elections to its Council, as such a step appeared to be in harmony with the general trend of opinion. During the first three war years an Emergency Committee had acted for the Council and the arrangement had worked both smoothly and advantageously. Since the elections in the Spring, Meetings of the Council have in consequence been held at regular intervals.

Sir Francis Joseph has kindly consented to remain in office as the Society's President. The Society in May sustained the very grievous loss of their Chairman-Elect, Cecil Langford, who died suddenly only a few weeks before he was to have assumed office. In the circumstances, and at the pressing request of the Council, Mr. Ernest West kindly undertook to serve as Chairman for a further year, Mr. R. B. Potter being elected to the office of Vice-Chairman.

If this review of the year's work were to be purely factual, as might well be thought appropriate, it would disclose the constant study and the solution of many problems of concern to the members of the Society, but perhaps it might more profitably concern itself with the consideration which is being given within the Society to the future, to that period fraught with problems as it must be when our swords are being turned into ploughshares, when guns, tanks and pre-fabricated ships are being turned into plant for the Gas Industry, and shells, aircraft parts and the rest are being turned into heating and cooking appliances, lighting equipment, water heating appliances, meters and the like. It is common knowledge, and indeed it is a fact full of hope for the future, not only that the membership of the Society is intact, which means that the experience of generations which the members collectively possess will be immediately to hand in those early post-war years, but that the Society has secured during the war years the support of several new members whose names are a household word in the Gas Industry. Moreover, it can be said with assurance that experience gained in many lines of production for the direct war effort will have its effect, a marked effect, on post-war production for the Gas Industry. The internal background, therefore, to an examination of the post-war position is eminently reassuring, since not only will the Society be stronger within itself than it was before the war, to the extent that for all practical purposes it will be 100% representative, but there will be brought to the purposes of our Industry a wealth of valuable experience in manufacturing processes gained in the hard school of war. This much to the credit side of the account.

The debit side, regarding which concern seems at times to be expressed, would appear rather to lose its unfavourable aspects on closer and impartial examination. It is a fact, of course, that a body of contractors and manufacturers whose national duty has been to make swords have been unable without detriment to this paramount national duty and without contravention of Government instructions to attend equally to the development of ploughshares. If, however, it may be assumed, as indeed it should be, that other industries of the country working under similar Government instructions are served by firms of like standing and like mind to the members of the S.B.G.I., then those industries will enter the post-war world in precisely the same position as the Gas Industry. Immediately prior to the war it seems to have been generally recognized that S.B.G.I. members were serving the Gas Industry well, and through the Industry the consumer equally well, so just as it might be claimed for the great motor car industry that after the war their 1939 models would be up-to-date, so may it equally be claimed that, whatever the Gas Industry look to be supplied to them, that also will be up-to-date, both actually and relatively. It seems important in considering our debits and credits as we approach the post-war era that we should do so realistically in relation to the known facts of the war period. The result, it is submitted, is encouraging.

Planning the Change-Over

THE framework of industrial organization within which all industries will operate in the post-war years is in course of preparation, and formal recognition of its importance is given by the creation of a Ministry of Reconstruction under a Minister of War Cabinet rank. Although at the time of writing no final and explicit decision has been announced by the Government, it must be assumed that, for some period after the cessation of hostilities, control of labour and materials will continue, and that every effort will be made to put to the most advantageous use in the national interest the labour and materials available. The Gas Industry must have its proper place, for instance, in the vast post-war building programme, and on this point again it is reassuring to know that an assessment of the Industry's requirements for this and all other purposes is being compiled, and it is equally reassuring to know that it is being done with the avowed intention of co-ordinating the Gas Industry's anticipated requirements with those of other industries. In a programme defined by the Prime Minister to be Food, Work and Houses for all, it would seem that the Gas Industry will have a conspicuous part to play.

There are three essential fields in which after the war the Society's members will expect to play their part. First and foremost they will have to seek to meet to the utmost of their capacity the requirements of the Gas Industry in this country, and the Society will be available, where required, to act for them collectively in regard to such problems as will arise. Secondly, such of the Society's members as are interested in export business will have to seek to play such part as falls to them in the development of export trade, and the Gas and Coke Oven Industries Export Group, which is financed and staffed by the Society, will be available as a liaison to the extent that is required between the Government and the Industry on all such questions. Thirdly, a great international effort will presumably be required in connexion with European reconstruction under the auspices of the United Nations Relief and Rehabilitation Administration, and the Society has already established contact with the appropriate authorities in regard to this matter, since calls on the services of the Society's members are clearly a contingency which has to be faced.

Co-operation without Interference

HAVING examined the position in the particular, there are perhaps some more general considerations which it might be worth while to examine in relation to the external background. When the war is over, the S.B.G.I. members will turn again to the task of making a living in a competitive world. It is a commonplace that we live by foreign trade, and that the imports of food and raw materials on which we depend are bought by the export of goods, by the payment of other nations for such services as they receive from us, and by income from overseas' investments. It is known that the war has entirely upset the balance of that account, and it is said that we shall have the formidable task to face of increasing our pre-war national exports by a matter of 50% if we are to maintain a standard of life no lower than that of 1938. We shall have to re-establish our prosperity in the face, presumably, of strenuous competition, and therefore in our export trade we cannot hope to escape the searching test of quality and price. Food, Work and Houses for all is a phrase requiring serious qualification unless we can hold our own in the markets of the world. It must not be forgotten that the immense war output of this country has been possible only because of the ability of industries built up

by private enterprise to adapt themselves to the requirements of a war economy, and their success in so doing is a reason against rather than for the indefinite retention by the State of control over commerce and industry. It would seem that both Government and industry have an immense task to face if we are to be a prosperous nation after this war, but success would appear only to be possible if neither tries to do the work of the other. Their functions all too clearly are complementary. Industry will look to Government not only for active support of the legitimate interests of British trade and enterprise, but also for the most strenuous effort to remove such obstacles as may lie in the path of their realization. So within the Gas Industry, the functions of the contractors and manufacturers are complementary to those of the undertakings, and the extent of the future success and progress of our Industry will be affected materially by the degree of willing co-operation to a common end, the benefit of the consumer, that it is possible to achieve within our Industry in those early post-war years.

If it is said, as it seems it can be, that the task before this country in the early post-war years is formidable, we as an Industry of prime national importance have also a great task before us. But if it was said in those uneasy years between the two wars that man seemed to have reached the limit of that development which began with the industrial revolution, then at least the present war has disproved any such thesis entirely. No one can look at the achievements of these latter years without becoming convinced that, far from having passed the zenith of development, we may well in fact be on its threshold. The potentialities of the immediate future are as great as, if not greater than, ever before, and the key is scientific and technical development. Many of the immense scientific and technical developments of the war years have their more peaceful applications, which await exploration and realization, but even more important perhaps is the assurance for the future that is inherent in recent scientific and technical achievements.

During the war years the Society has had to assume many new responsibilities, and the large number of questions that are bound up with them have convinced the Council that the Society's own organization must be materially increased and substantially strengthened. This matter is under active consideration at the present time. To the extent, however, that labour and materials are made available, the considered view of the Society's Council is that the Society's members will be able in turn to meet all the requirements of gas undertakings in the early post-war years. It is the confident belief of the Council that the possibilities which were before the Society and its members in the immediate pre-war years will return, and provided there is willing co-operation between the Government, the undertakings, and the contractors and manufacturers, and provided none tries to do the work of the other, each realizing their respective activities are complementary, then the future can be faced with confidence.

B.C.G.A.

DURING the dark days of Dunkirk the Gas Industry, like industry in general, did not anticipate, perhaps dared not anticipate, that the need for propaganda would arise before the cessation of hostilities, with the consequence that staffs and publicity experts were largely disbanded. With the dawn of victory appearing on the horizon the Association has once more visualized the need for propaganda. It is not the old style sales or competitive propaganda of which we have need, but propaganda which has an educative value and can play its part in the public welfare. The Gas Industry has a messsage to tell—a message on the unrivalled service it offers particularly in the domestic sphere, as well as in the industrial and commercial worlds. The fact can easily be overlooked that fuel for light, heat, power, cooking, and refrigeration is just as essential to the maintenance of life itself as is food, and the more the public know of their fuel supplies, the more the public will be able to use them wisely, economically, and with discrimination.

With such thoughts in mind, and within the limits imposed by the circumstances referred to above, the Association's work over the past twelve months has been devoted to the building up of greater knowledge and appreciation by the public as a whole of the national and personal importance of using coal *after* distillation at the gas-works. The Association has carried this message to the public by a regular series of advertisements inserted in all the principal newspapers in the provinces, and in certain national newspapers throughout the whole of the present year. The advertising has been supported by leaflets and diagrammatic charts which have been in widespread demand, particularly by educational establishments. The campaign also gave strong support to the national appeal for fuel economy; fuel saving has been advocated too by Press advertising by individual members, who have made considerable use of the special advertisements prepared by the Association, by the distribution of printed material, and the use of posters and window displays. The Association's advertising has also covered the technical and trade Press, and this group of media is to be extended in the future to ensure that there will be a better understanding of the Industry and its service to the community among the professional classes.

The Association is fortunate in having built up during the years preceding the war a library of documentary films dealing with social problems with which the Industry is associated, such as Nutrition, Smoke Abatement, Housing, and Education. The library also includes films on the manufacture and utilization of gas, and wartime additions have, of course, dealt with wartime problems, such as food, canteen feeding, and so on. The Association has thrown open the film library so that all approved borrowers can have the films on free loan. This has resulted in a widespread and intensive demand for films for many kinds of audiences throughout the country. There are nearly 400 copies of the Gas Industry films in the library, and all are always fully booked. Schools in particular are frequent borrowers, while the Services—particularly the Army Education Department—make a special feature of them in their educational work. A series of eight copies each of eight of the Gas Industry films was presented to the Army Education Department during the year, and this Department has since added to this number by purchasing an additional fifty copies on their own account.

Display Publicity

THE showroom window is the focal point at which undertakings come into contact with their local public, and it has been accepted in the past that the showroom window must constantly be at work to attract the attention of consumers to the most modern fuels and appliances available to them for domestic purposes. While it is impossible for the showroom window to continue this function during the war, there are, nevertheless, many useful purposes which it can serve. Firstly a cheerful showroom window greatly helps towards keeping our thoroughfares cheerful to shoppers and passers-by. Secondly, in numerous cases throughout the country the window is used to support campaigns of national importance, such as Fuel Saving, Food, "Make-do-and-Mend," War Savings, and so on. In these respects the Association has continued to keep members regularly supplied with attractive display material, and has relieved hard-pressed local staffs of the need to prepare their own displays.

While paper control has made it impossible to issue more than a limited number of new publications, the Association has nevertheless maintained an output of printed material which has been widely used by members throughout the twelve months. An increased demand has been received during the year, and over 5,000 orders have been dealt with involving several million copies of various publications. The most noteworthy of these is "The Treasure in Coal," which is a revised version of the leaflet entitled "The Romance of a Lump of Coal."

The spoken word to the many "existing" audiences composed of local branches of national organizations, such as the Women's Institutes, Townswomen's Guilds, the W.V.S., N.F.S., A.R.P., Youth Organizations, and others, is of vital importance in the dissemination of informative information on the Gas Industry and its importance to the nation and to the public. The Association has built up a series of lecture notes and these are now in considerable demand. As a noteworthy instance the National Fire Service College at Saltdean, Brighton, now regularly includes Gas Industry talks as a part of the courses.

Educational propaganda in schools has always been regarded by the Gas Industry as a vitally important problem, and the Association now has in course of preparation a series of three books which will meet the full range of requirements for the representation of the Industry in school curricula. Work is proceeding as rapidly as possible upon the preparation of books for school science classes, for general knowledge classes, and for domestic science classes respectively, and it is hoped to be able to publish these volumes by the summer of next year.

Special Contacts

WITHIN the limits of the staff available, the Association has lost no opportunity to make contact with outside organizations and individuals whose work has a bearing upon the interests of the Industry. In this respect the Association is in close touch with Government Departments upon the national food, fuel, and other campaigns. Contact has been made with the authors of books and literature dealing in particular with post-war problems, and not least among the Association's contacts have been those with the Press, to whom articles

have been regularly supplied. Under this heading, also, special mention should be made of contacts with the three Women's Services —the W.R.N.S., A.T.S., and W.A.A.F.

In conclusion, this retrospect would be overlooking two vitally important aspects of current activities if it did not include a reference to the work of two committees which have been set up to deal with problems of outstanding importance. The Gas Industry has always made a special study of the architect and builder, and a committee is now at work on the preparation of a volume which will readily give the most up-to-date information on the installation and utilization of gas. Another special committee is engaged in an extensive research into the whole problem of kitchen planning and fuel services in the home. This research, which the Ministry of Works is following with close interest, will, it is anticipated, play an important part in influencing the use of gas in post-war housing.

It is impossible, in a brief review of this kind, to describe in detail the many aspects of the educative work in which the Association is now engaged, but at least this report will show that the Association has been, or is, dealing with the whole problem in the light of current needs and circumstances, and that all the activities are complementary to each other, and are designed, as far as possible, so that all sections of the community are covered.

Women's Gas Council

THE ever-increasing importance of women's work has been reflected in the activities of the Women's Gas Council, whose staff has been increased to cope with additional work. The outstanding events of 1943—the visit of Her Majesty the Queen and Mrs. Winston Churchill to the fuel economy stand at the Middlesex Domestic Front Display, the speech by Miss Irene Ward, M.P., at the annual meeting and the presentation of "Gas and the Modern World"—an educational exhibition for circulation to men and women in the Forces—were the outward expression of the less conspicuous but extremely valuable educative and social work carried on throughout the year. Mrs. Abbott represented the W.G.C. at the women's conference at the Albert Hall in September, the first conference of women ever summoned by the Government, and there has been active co-operation with a host of other organizations, notably the Housing Centre, the British Federation of Business and Professional Women, the National Council of Women, the Women's Group on Public Welfare, the W.V.S. Advisory Council, the Gas Installations Committee of The Institution of Gas Engineers, the Domestic Heat Services Committee of the B.C.G.A., the Women's Advisory Housing Council, and the National Association of Training Corps for Girls. Working in co-operation with the local gas undertaking in each case, the W.G.C. provided fuel economy stands at eight exhibitions in and around London, and display material for other undertakings. When the Royal Society for the Prevention of Accidents held a "Safety First" exhibition in September, the W.G.C. provided a display to illustrate "The Safe Home."

The branches, co-operating with local branches of other organizations, are doing good work, and many of them report increases in membership. Women's opinion on many aspects of the world of the future is being called for, and the Committee feels there is urgent need for more new branches to be formed and old ones reopened. The President, the Dowager Lady Nunburnholme, has consented to visit some of the branches, and the Council is building up a panel of lecturers which includes Mrs. Darcy Braddell and Mrs. Simpson, who is an experienced lecturer on domestic science subjects. Several of the branches have also been visited by the Secretary during the past year. The Executive Committee, under the Chairmanship of Miss Wolseley-Lewis, meets six times a year, and meetings for Headquarters members are held every three months. *Fanfare* continues to be published quarterly, and articles supplied by the Ministry of Fuel and Power, the Board of Trade, and the Ministry of Agriculture have been included during the year. Illustrated by Mr. Harry Rountree, the leaflet increases in popularity, and the average sale is about 25,000 copies. A record circulation of 40,000 was attained for the issue dealing with the "Save Fuel for Battle" campaign.

Technical Aspects

THROUGHOUT the twelve months the call has been for fuel economy, and the call is insistent. The Gas Industry has tackled the subject of fuel economy in its own process with both vigour and success, and the wartime results, with haphazard coal supplies, presage much for future peacetime achievement. In our first issue of the year we began publication of a constructive contribution on the subject by Dr. Stuart Pexton based on investigations continuously pursued for the past twenty years or so. Appropriately it synchronized with the dominant national aim of fuel economy. The major point he made was that we should consider gas-making from the point of view of a gas-works as a whole as distinct from a carbonizing unit, and he put forward the opinion that carbonizing plants which are prolific producers of waste heat steam will cease to be erected simply on the grounds that they are prolific fuel consumers—for a therm of steam, when produced from coke, usually costs as much as the raw materials for a therm of gas. And we can economize in steam by balancing the requirements of the load. The steam consumption for a well-planned works may be as low as 10 therms per ton of coal carbonized; for badly conceived works it may be many times this figure. Then we had the Directorate of Gas Supply's Fuel Expenditure Index—the relation of the potential energy in the raw materials used in gas manufacture to the potential energy in the products for sale. This conception has been of immense value. It focused attention on gas-making efficiency and ultimate efficiency of gas in use. It was found that the national fuel expenditure averaged about 26. Need for improvement was apparent. At the time we epitomized the situation thus: A ton of coal contains 300 potential therms. We use as fuel in gas making some 70 therms to produce 80 therms of gas. The efficiency of gas production is approximately 53%. If we use this gas at 50% efficiency the overall thermal conversion efficiency of coal to useful heat *via* gas is about 27%. We could increase this figure considerably. That is one of the lessons taught in unmistakable terms during the year. Specifically, thought has been directed in many channels, among these being the use of water gas plant as stand-by boiler plants—the application of the producer gas made to the generation of steam in waste heat boilers. It has been pointed out that water gas plants are usually employed as peak load units; and it is not unknown that the meeting of peak loads may be delayed simply because the capacity of the works boiler plant for steam is saturated at the very time when the additional steam is needed to bring the water gas plant into operation to cope with the peak loads. The use of water gas plant as producer gas plant would, in fact, provide as it were a "self-starter" to peak load water gas production. Again, to start-up a water gas plant on air alone is to invite clinker troubles, which could be minimized by starting up the plant as a producer.

In this aim of reducing fuel consumption at gas-works, attention to detail is undoubtedly necessary, and the notes by Mr. G. M. Gill which we have published on this aspect—notes particularly for the smaller gas-works—should have been found helpful. They have, as it were, supplemented in detail the general advice which has been issued from time to time by the Ministry of Fuel and Power. The notes have stressed that it should not be possible in horizontal retorts with normal coal and under normal conditions to produce a straight coal gas of a calorific value lower than about 520 B.Th.U., and this with benzole extraction. Such a gas would have an inert content of about 10%. Yet there have been and still probably are many undertakings employing horizontal retorts and supplying gas of a calorific value below 420 B.Th.U.—a sign of inefficient working and fuel wastage. And regarding fuel wastage, there is the fuel used to provide producer gas, and it has been stressed that ashes are taken out of producers in many cases with too high a content of coke. The chemist should be allowed to offer his help in the proper running of gas-making and steam-raising plant. The employment of adequate technical staff to carry out the necessary tests and observations and then act on the information gained is one of the soundest investments that a gas undertaking can make. In which connexion we regarded the account with satisfaction which Mr. C. F. W. Rendle gave during the year of the work of the Midlands Gas Engineering Advisory Board, whose activities had such a good foundation in the area's mutual aid scheme. It was found that some 40% of the gas undertakings employed no technical personnel whatever. So a scheme was evolved employing mobile caravan laboratories and apparatus cars, a central laboratory, and district base laboratories. As a matter of fact it has been shown during the year that economies can be effected in undertakings which on the face of it are working efficiently—simply by attention to detail. And discussing retort house economy we must mention the Paper on the subject by Mr. C. A. Poulson, published in the Autumn. Of course our Industry is working against considerable odds. Striving to improve carbonizing efficiency, it starts right away with a big handicap in the quality of coal supplied to it—sometimes coal having an ash plus moisture content of 25%. Such a handicap is, to say the least, aggravating. Of every £1 spent on coal, 5s. is paid for ash and water; works handling costs leap up; carbonizing plant capacity is decreased, and so is producer area; and, of course, the quality of the resultant coke is seriously affected. In some areas there has been increase in ash content over the past six years of 50%; and prices of coal have practically doubled during that period. The while is the clamant and necessary call for economy. But we can do much, and the economies we have made in wartime, and particularly during the

past twelve months, will have an astonishingly good result in peacetime if we are supplied with raw material of the right quality, and if we are able to purchase to reasonable specification.

Finally, in regard to carbonization in continuous vertical retorts, we have had the Paper by Dr. A. E. Haffner and Dr. F. R. Weston, which we concluded in last week's "JOURNAL." The method of attack adopted by the investigators—to "freeze" the retorts under normal working conditions—appeared to us as opening up great possibilities of arriving at a closer understanding of the continuous carbonizing process.

On the utilization side we have had the technically important contribution by Mr. Dean Chandler on the application of "luminous" (or "neat") flames to domestic appliances, of especial interest being their use, *in toto*, on the gas cooker. His work in this respect has, we think, been quite outstanding, and is likely to benefit the Gas Industry in many ways over a very wide field of gas usage. Nor has there been lack of development in the sphere of distribution, as the pages of the "JOURNAL" testify. The progress of the West Yorkshire Gas Grid, described in our columns last August, is a case in point—a system which has made available over a wide and fertile area an ample and economic supply of gas of constant quality and low in sulphur. The high-pressure mains traverse both highly industralized and rural districts; industrial processes of great variety are being fed with heat on tap, the while the villager is enjoying a type of gas service hitherto unknown to him. Coke oven gas which would otherwise have been wasted has been most effectively harnessed, and in this regard the scheme is a pointer to what may well lie ahead through greater co-operation between the gas and the coke oven industries. Later in the year we described another example of integration, that which has taken place in the Swindon area. And in both cases the technical aspects of the development which has taken place are fully worthy of record in any review of 1943.

Coke

REGARDING the coke situation during the year there stands out as a prominent and promising feature the growing alliance of the National Federation of Gas Coke Associations with the British Hard Coke Association and the South Wales Anthracite and Dry Coal Committee. Actually, for two years or more there has been co-operation between these representative bodies, but more recently this co-operation has been further cemented by the formation of the Solid Smokeless Fuels Federation embracing the work of the whole harmoniously and effectively. Drawn from the three solid smokeless fuel industries—one dealing with a natural product, the other two with processed fuels—a technical committee has been in operation for some time, and has been primarily responsible for the production of several publications relating to fuel economy, noteworthy among them being a thoroughly practical book on the use of producer gas for industrial purposes; and we would mention, too, the timely technical bulletins on the efficient utilization of smokeless fuels for steam raising, central heating, and domestic purposes. In close contact with the post-war planning committees and groups of the Ministry of Works as well as of the Ministry of Fuel and Power, the technical committee has also co-operated closely with the manufacturers of solid smokeless fuel-burning appliances, the result of which work has been improved appliances of new design—open fires, domestic boilers, closed stoves, and so on—and already models of the new apparatus are in course of production and some of them have been tested.

There can be no doubt concerning the benefit of this tripartite working of three industries which formerly were virtually competitors; after all, the development of each industry lies in the same direction, and it seems clear that the advancement of the gas coke market can best be made in unity with rather than in opposition to the producers and suppliers of smokeless solid fuels outside the Gas Industry itself—fuels which to a great extent at any rate fulfil the same requirements both domestically and in industry. There is further wisdom in an alliance of this kind in that it engenders greater negotiating strength and makes for all-round improvement in performance, to the satisfaction of the consumer. Progress during the past twelve months strengthens our view that the post-war prospects for the development of the solid smokeless fuel market are bright. The need for using our coal to the best advantage has become far more apparent during the war; the call for the abolition of smoke is more forceful; the fact that processed fuels mean conservation of our coal supplies is gaining more widespread recognition. Apart from anthracite, smokelessness implies processing.

In the early part of the year the stock position in regard to gas coke caused some little uneasiness; it was a question of over-accumulation in certain undertakings. Actually the position was more artificial than real, being in fact encouraged by the Minister of Fuel, who wanted stocks at the highest level to bridge possible difficulties due to the gap between coal production and consumption. The force of this policy is now seen in the drive being made by the Minister to encourage a greater use of coke in both domestic and industrial premises. Regarding the latter, a cut of 10% in coal consumption was enforced on Dec. 13 last, and coke will step in to augment coal supplies. Further than this there has been a considerable movement towards the "programming" of the lower priority industries, as a result of which greater quantities of coke are certain to be used. Already this movement is beginning to have its effect of clearing excessive stocks held by some undertakings, somewhat to their embarrassment. As far as the South of England is concerned, the levy has continued in active operation, and has facilitated the movement of coke at scheduled prices throughout the whole of this extensive area. This machinery, which has worked with the utmost smoothness, has afforded most effective help to both consumer and producer in enabling coke to be moved in many cases over long distances, the additional freight costs being met from the levy fund—in a nutshell, from abundance to shortage without cost. In some places the stocks are heavy, it is true, but the difficulty does not arise from lack of immediate future outlet. The factors which are operating are the inadequacy of the labour needed to handle these stocks, embargoes on traffic imposed by the railways, and the shortage of wagons for the purpose. We would, however, offer a word of caution. The immediate coke position is sound enough as far as outlets for the product are concerned ; but some of these outlets are temporary wartime markets, unlikely to survive after the war. Our point is that established markets—peacetime markets, industrial and domestic—should not be neglected, but should be fostered as far as it is practicable. Far too prevalent is the absence of effort to build up local markets for coke, and the undertaking of sales which will give the quickest disposal of the coke irrespective of where and how it is used. We must replace haphazard selling by organized development.

As we end the year there is another matter of importance affecting the position of coke stocks, and that is the appreciation by the Government of the economic considerations relating to the manufacture of carburetted water gas, which requires imported oil. Demand for gas outstrips supply, and the steps which the Government has taken in regard to oil supply to gas undertakings will mean a greater use of coke for gas making. Holes will be made in coke stocks, and less coke will be available for sale per ton of coal carbonized.

Product Ammonia and Sulphur

HOME prices for sulphate of ammonia remain the same as last season, and represent 48s. per ton over the corresponding prices of 1938–39. Again, farmers and agricultural merchants have been granted an early-booking rebate, of which full advantage has been taken. Transport of fertilizers by rail is not now so easy as hitherto. Movement of troops and wartime traffic create bans on important railways. Under these conditions, collections from the sulphate works are to be commended, as the Railway Companies have difficulty in finding trucks and sheets, and it is feared that deliveries this year by rail will be belated if for no other reason than that the Railway Companies cannot adequately cope with the traffic. The cost of manufacture of sulphate of ammonia continues to advance, but these additional costs cannot easily be recovered, because the farmers' interests appear to be of primary importance. Certainly, the unit price of ammonia remains as in 1939.

In the United Kingdom there are now seven nitrogen fixation factories—four government and three privately owned. In the United States several new synthetic ammonia plants have been erected, while in Canada ammonium nitrate is being produced in appreciable quantities and sent to the U.S.A. The formation of a World Nitrogen Cartel to replace the pre-war European Nitrogen Cartel is indicated as a desirable step, whatever restrictions may be imposed on the production of nitrogenous fertilizers in enemy countries. It can hardly be doubted, so far as gas undertakings are concerned, producing as they do more sulphur material than that required for fixing product ammonia, that regional factories treating concentrated gas liquor and producing sulphate of ammonia, fertilizers containing alike nitrate and ammoniacal nitrogen, ammonium phosphate, and, indeed, complete fertilizers, may represent the shape of things to come.

It has been emphasized by W. N. Baird and P. Parrish that the unit-price of sulphur in spent oxide is inevitably bound up with the recovery of ammonia, and for this reason, apart from national needs, every ounce of ammonia should be recovered, preferably as concentrated gas liquor. The production of spent oxide has increased appreciably during the war, for several reasons, notably because (*a*) less water-gas is being manufactured, (*b*) the quality of the coal being

carbonized has depreciated and the sulphur content has increased, and (*c*) sulphur compounds are being recovered to an increasing extent. Spent oxide production is now estimated at 220,000 tons annually as against a pre-war figure of about 150,000 tons. R. M. Roberts has contributed some interesting observations on the production of sulphate of ammonia from coke oven gas under wartime conditions. Grade I sulphate of ammonia of well-defined grain size is now produced in the majority of coke oven plants, in spite of the difficulties and exigencies of war. The maintenance of such a high standard usually involves the installation of auxiliary equipment for the attainment of the correct physical conditions and also, in some cases, for the chemical control of the saturator liquor. Auxiliary agitation in the saturator is essential, and this, in turn, accentuates problems arising from the corrosion and erosion of saturator parts. Several bronzes have been used experimentally with pronounced success, and non-metallic coatings, usually based on phenol formaldehyde as a binder, have been used for protecting such parts of the cracker pipes from the effects of excessive erosion.

As regards the control of crystal size and shape, sodium thiosulphate has been found to be effective in reducing ferric salts to the ferrous state in acid sulphate of ammonia solutions, and thereby preventing iron from causing the production of fine needle-shaped crystals. When aluminium is present, however, reduction of the ferric iron concentration is not, in itself, sufficient to prevent the formation of fragile crystals, and it is necessary to control the effect of the aluminium ions by the addition of magnesium sulphate. It has been found convenient to make additions of magnesium only at infrequent intervals, since the rate of its removal from the solution is of a low order.

Tar and Tar Products

It was emphasized last year that the General Control of Coal-Tar Order, 1942, was issued on May 1, and that this Order introduced a system of registration for sellers and wholesale suppliers—other than actual producers—of coal-tar and coal-tar products. Clearly, this contemplated registration of merchants revealed a growing need for the most efficient utilization of tar and its products. But the view was expressed that it was not intended seriously to interfere with the normal activities of established concerns in the trade. The Controller has continued to consolidate his control, to exercise his powers wisely, and the adroit way in which he has maintained an equitable wartime balance between distributors and producers on the one hand, and consumers on the other, has been striking. The control arrangements have worked very smoothly, and British tar products have contributed their maximum to the war effort, not only in this country, but in the United States and in British Commonwealth countries generally.

The Control of Coal-Tar Order, 1943, provides for the keeping of records and furnishing six-monthly statements of the actual quantities of tar made, of the quantities in stock and of the amounts disposed of during the period, with the names of the buyers and the purposes for which the tar is acquired. Distillers, on their part, will be asked to supply annual statements relating to their purchases of tar, with full details of the sources. Other returns which distillers have to make to the Control are monthly figures of unrefined crude anthracene and crude anthracene made, in stock, and disposed of; quarterly estimates of make and disposal of crude and refined naphthalene; weekly statements of road tar makes, stocks, and deliveries; quarterly estimates of the production of coal-tar acids; monthly statements of the makes, stocks, and disposal of phenols, cresols, and cresylic acids; and quarterly statements of stocks, purchases, and deliveries of pure pyridine and various other grades of coal-tar bases. There is evidently to be cross-checking of the figures returned, and it is clear that the full data, when correlated, will afford an indication of the Industry's present and immediately potential resources such as has not hitherto been available.

This year has seen further price controls—in June there was issued the Control of Coal-Tar, Naphtha, and Xylole Order; toluole prices were raised under the Control of Toluene (No. 3) Order, July 14, and the extension, in its recent revision, of the maximum price provisions of the Coal-Tar Products Prices Order to the remaining "specification" grades of creosote, implies that practically all the main products of the tar distillation industry are now covered. Creosote oil for purposes of hydrogenation to liquid fuels has been subject to "home market" prices control since the beginning of this year; but prices for creosote oil for use in benzole absorption, timber preservation, and disinfectant manufacture have not directly been controlled, although the prices which have obtained during the year are little different from those now officially fixed. The new Order is a comprehensive one, and the definition of "coal-tar oils" and not "creosote" is used for timber preservatives, &c., and is intended to cover blends of straight distillates with up to 5% of carburetted water gas, pitch, or refined tar. In view of the demand for tar bases for the manufacture of chemotherapeutics and other products, the general licence permitting their disposal by distillers and importers has been withdrawn as from Oct. 1, and transactions will require individual licences from the Coal-Tar Controller.

A company formed by the trade, in agreement with the Coal-Tar Controller, to regulate the export trade in tar acids to the U.S.A., has been registered as "Pamtas," 90, Mitchell Street, Glasgow. The Company's name is a condensation of the initial letters of the words "Producers' and Merchants' Tar Acid Sales."

Last year, in dealing with the prices of tar products, we remarked that since May, 1942, "there have been few quotations; indeed, prices are largely controlled," and we foreshadowed what has since occurred —namely, the regulation of crosote oil prices. We now anticipate that pitch prices will shortly be controlled, as soon as agreement has been reached about "specifications." The growing appreciation of the need for long-range research has led to the production of new products to displace bitumen, and pale and dark resinous bases have been manufactured for the paint industry and for other purposes.

Para- and meta-cresols have been produced in this country in commercial quantities for twenty-five years, but importance is attached to a new method of separation evolved by D. K. Stevens and the Mellon Institute. The process in question involves alkylation with isobutylene, separation of the tertiary butylated phenols by fractional distillation, and final debutylation of the isolated derivatives to yield the desired individual phenols. Cresol separation by this method is now being practised, and this method will doubtless gain significance in this country when isobutylene becomes available.

The death of James Morton recalls his outstanding work in the introduction to this country of the process of making phthalic anhydride by the vapour phase catalytic oxidation of naphthalene, followed by the manufacture from phthalic anhydride of alizarin red, benzoic acid, culminating with the signal achievement of the British vat colour industry—Caledon jade green. Phthalic anhydride produced in the manner described has been in commercial use for over 20 years. It has assumed greater significance than ever during the present war. It has been found that although tetralin and methyl naphthalenes can also be used to produce phthalic anhydride, the yields are always lower than when naphthalene itself is employed. The most successful catalyst is that made by decomposing ammonium meta-vanadate with heat, and fusing the oxide on commercial glassy silica gel (8 to 10 mesh), until the carrier is completely coated with the pale purplish-red oxide. The maximum yields of phthalic anhydride obtained are 76% in the case of naphthalene, 70% in that of tetralin, and from 40 to 50% in that of methyl naphthalenes.

It has been revealed during the year that the original chlorobenzene process for the manufacture of synthetic phenol was not a pronounced technical and economic success, because of the accumulation of diphenyl oxide. By the Dow-Aylsworth process, phenol is manufactured from chlorobenzene by reaction with caustic soda at a temperature of 350°–400°C., and a pressure of 5,000 lb./sq. in. The reaction is effected in a tubular reactor, through which the mixture is continually pumped.

One of the problems with which the tar industry is faced at the present time is the disposal of acid tar. This constitutes a real difficulty, but if regional works combined it is conceivable that a solution could be found.

During the year we have been reminded of the significance of the coal-tar industry, and the following figures, culled from the Presidential Address of Mr. E. V. Evans, in June last, merit record:

	Tons.
Production of tar at gas-works and coke ovens	2,000,000
Disposed of—	
As road tar	750,000
Creosote hydrogenation	210,000
Creosote used at home	145,000
Creosote exported	95,000
Pitch used at home	400,000
Pitch exported	350,000
Sundry uses	50,000
	2,000,000

The asphalt and bitumen companies have formed a National Committee, one of the essential objects of which is to co-ordinate and extend research. Apparently they are out to recapture some of the markets which they have inevitably lost. War conditions have imposed restrictions on the importation of asphalts and bitumens in this country, and, as remarked last year, this has led to the substitution, wherever possible, of tar pitch and home-produced materials. It is

to be hoped that the use of the latter materials for damp-proof courses, roofing felt, and special road tar preparations to substitute bitumen, will be largely retained.

Stocks and Shares

GAS stocks and shares began the year well, and each month up to about the end of September saw further improvements in value. Latterly, however, the upward movement has been less pronounced, although, except in a few isolated cases, former gains have been well held. The appreciations since January last have, in many instances, been very substantial, and there is no doubt that, despite the official precaution which has resulted in the non-publication of accounts, many investors have endeavoured to include a parcel of gas stocks among their holdings and have been satisfied to take a moderate return now, and in some cases none at all, in the hopes of something very much better in the future. As is well known, two of the three Metropolitan Companies made modest disbursements on their ordinary stocks for 1942, and the Gas Light and Coke Company has paid an interim of 1½% this year. Since the commencement of the year Gas Light units have improved 2s. 3d. and South Metropolitan ordinary 10 points, while the latter Company's 6% preference stock, on which the full dividend was paid for 1942, is now 36 points higher. In the case of the Wandsworth Company, which has been increasing its rate of ordinary dividend since 1940, the appreciation in capital value is a little over 25%.

In the majority of cases the provincial gas companies have maintained their pre-war rates of dividend, and prices during the year have consequently shown marked improvements, while companies operating abroad are also well in the picture. Both Bombay and Oriental stocks have made satisfactory appreciations, the latter by no less than 30 points, while the rates of dividend in each case have also been maintained at pre-war levels.

With the return of peace many new factors will come into being, and it is difficult to estimate to what extent the Gas Industry may be affected. The cost of coal and material will presumably tend to fall, and so may, for a time, the industrial demand for gas. Conditions outside the Industry's control will also play a large part, but it is clear from the Federation's Post-War Planning Report that the Industry is preparing to meet the social, industrial, and economic conditions of the future.

Obituary

ONCE again our Annual Review brings us the opportunity of remembering those members of the Gas Industry who have died during the year, and of paying tribute to some of those for whose passing the Industry is the poorer.

The year had barely commenced when the Industry suffered a very great loss in the sudden death of Mr. Stephen Lacey on Jan. 2. Mr. Lacey was controller of Gas Sales in the Gas Light and Coke Company, but had, for a year past, been acting as Convener to the Post-War Planning Committee of the British Gas Federation. Mr. Lacey's family had been connected with the Gas Light and Coke Company for over 100 years, and he himself was born at Beckton Gas-Works in 1885. He joined the Company in 1911, was appointed Distribution Engineer in 1918, and on the death of Sir Francis Goodenough in 1931 became Controller of Gas Sales. He has held many distinguished offices, and was President of The Institution of Gas Engineers in 1936/7. Mr. Lacey was, we believe, the only gas engineer to have been twice honoured with the Institution Gold Medal. These were awarded him in 1923 and 1928. Yet it will not only be for his services to the Industry that Mr. Lacey will be remembered, but also for his human qualities. He was shrewd, a good judge of character, and always willing to help young people however busy he might be.

On Jan. 27 occurred the death of Dr. F. S. Sinnatt, C.B., M.B.E., F.R.S., whose work as Director of Fuel Research brought him into contact with so many in our Industry. In February Scotland sustained a loss in the passing of two well-known members—Mr. William Balfour, Engineer and Manager of the Kirkcudbright Works, and Mr. R. S. Taylor, Manager of the Haddington Gas Company. Mr. Taylor was a Past President of the Waverley Association of Gas Managers. Early in April another well-known figure in Scotland passed away in the person of Mr. D. G. Blackie, Senior Partner in the firm of David Grant & Company. Later in the same month Mr. Alfred Gregory also died. He was Engineer, Manager, and Secretary of Harwich Gas and Coke Company, Ltd.

Mr. C. G. Langford, who died suddenly on May 6 at the age of 55, was a Director and General Manager of Richmonds Gas Stove Company, Ltd. (Radiation, Ltd.), and Managing Director of George Glover & Company, Ltd., of Chelsea. Mr. Langford began his career at the Coventry Gas-Works, and in 1911 went to Brazil to the Para Gas-Works, of which he became Engineer and Manager. He was a member of The Institution of Gas Engineers and of the Institution of Mechanical Engineers, was Vice-Chairman of the Society of British Gas Industries and, but for his death, would have been Chairman in June. Mr. J. McNicholl, Engineer and Manager, to the Cork Consumers' Gas Company, died on June 2. He was a native of Sunderland, and went to Cork in 1919. He was President of the Irish Association of Gas Engineers and Managers in 1926/7. Others who died during June were Mr. J. L. Butler, Managing Director of Messrs. W. J. Jenkins & Company, Ltd., Mr. Andrew Thomson, Engineer and Manager of the Inverness Gas Department since 1903, and Mr. H. Higham, who had been Engineer, Manager, and Secretary of Teignmouth Gas Department since 1918.

August saw the passing of Mr. Frederick Brooks, who had been connected with Messrs. Thomas Potterton (Heating Engineers), Ltd., for fully 40 years. Mr. Brooks had made most valuable contributions to the development of the application of gas to the many problems relating to water heating. In September we had to record the death in action of Lieut. T. W. Coghlin, Publicity Officer to the British Commercial Gas Association since 1932. Mr. Coghlin, who was 37, was married to Mrs. Eileen Murphy, Director of Home Service, B.C.G.A. Also on active service and in the same month the death was presumed of Mr. R. Morton, Engineer and Manager of the Dorchester Gas and Coke Company, Ltd. Lieut. Morton, who joined the R.N.V.R. before the war, was 36. Others who passed away in September were Mr. F. Hornby, Manager and Secretary of the Guisborough Gas Company, and Mr. Alfred Smallwood, who had devoted a lifetime to the metallurgical industries. Mr. Smallwood was the founder of the Incandescent Heat Company, and was also connected with other firms well known in the Gas Industry. On October 27 died Mr. F. J. Angell at the age of 73. Mr. Angell received his engineering training in the U.S.A. and came to this country in 1897, when he joined Messrs. Humphreys & Glasgow. He was associated with the firm for 46 years and was a Director for 29.

The Leamington Priors Gas Company, Mr. R. S. Ramsden tells us, has already conducted two parties to inspect the skeleton house at Radiation, Birmingham. Members of these parties of both sexes were drawn from county, town, and rural district councils, architects in private practice, women's institutes, soroptimist and business and professional women's clubs.

A Joint Meeting of the Eastern and the Western Districts of the Scottish Junior Gas Association was held in Glasgow on Dec. 11. Mr. A. Fulton, President of the Western District, presided, and Colonel C. M. Croft, D.L., J.P., gave a Paper entitled "The Future of the Gas Industry and of Gas Engineers."

Refills for the R. & J. Dempster Desk Calendar are now ready. These will be forwarded on application to the firm and payment of 1d.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in the "Journal" should not be taken as an indication that they are necessarily available for export.

Obituary

As we go to press, we learn with the deepest regret of the death, on Christmas Day, of Sir RUSSELL BENCRAFT, Chairman of the Southampton Gaslight and Coke Company.

* * *

Major GUY P. LANKESTER died in hospital on Dec. 4. He was in charge of the coke and fertilizer department of the Northampton Gaslight Company. He served, with the 4th Battalion Northamptonshire Regiment, throughout the last War in Gallipoli and Palestine, and was finally attached to the Headquarters Staff. He was educated at Malvern College and University College, London. He joined the Company in 1932, and married the daughter of Lt.-Col. G. S. Eunson, and his son is now serving in the Middle East.

Letter to the Editor

DEAR SIR,—The article in your issue of Dec. 15 entitled "Gas Boards on London Transport Lines" was a timely example of the value of the Press in giving expression to independent opinions in controversial matters. I would like, if I may, to add a few comments.

There appears to be general agreement in the Industry that if all the latent possibilities of service to the community are to be realized, geographical integration and co-ordination of a comprehensive nature between existing gas undertakings must be planned and carried out. It cannot be doubted that when such operations pass from general aspirations to concrete proposals, many who "agree in principle" will make loud lamentation when words become actions.

Parochial and—I must use that overworked expression—vested interests will raise the strongest objections to losing their identity. It is for this reason that one can see the necessity for compulsory powers of the most explicit nature if the Industry is to be remoulded into the form and organization which are called for on grounds of technical and economic efficiency.

When such a scheme of integration takes place there will be numerous questions of compensation to be decided as many of the existing undertakings are bought out. It is most important, owing to the compulsory nature of the transactions, that the necessary arbitration should be carried out by a body whose impartiality is above suspicion; it follows that such a body will have to be drawn from outside the Gas Industry itself. But when the individual undertakings have lost their identity in a regionally planned scheme, who is to have control of the re-formed Industry? Can it at this stage revert to private ownership? Obviously not, unless there is a measure of public control. It seems to me, then, that the logic of events points to some form of public corporation which would necessarily be answerable, ultimately, to Parliament. An element of consumer representation on the governing board I regard as vital, otherwise the tendency might be towards the corporative state of the Italian Fascist type.

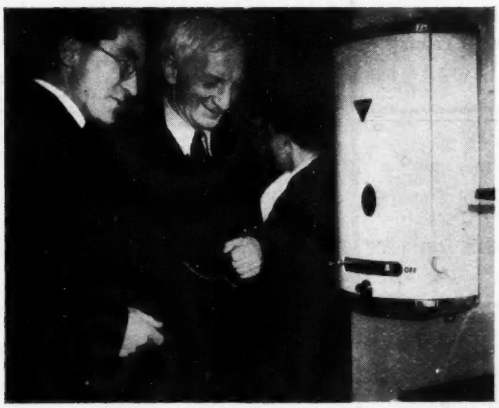
Naturally the future of the Gas Industry will be largely determined by the complexion of the Government after the next election, but the present indications are that a high degree of public control of industries of the monopolistic type will be the shape of things to come, and it behoves the Gas Industry to consider its future in such a framework.

Yours faithfully,

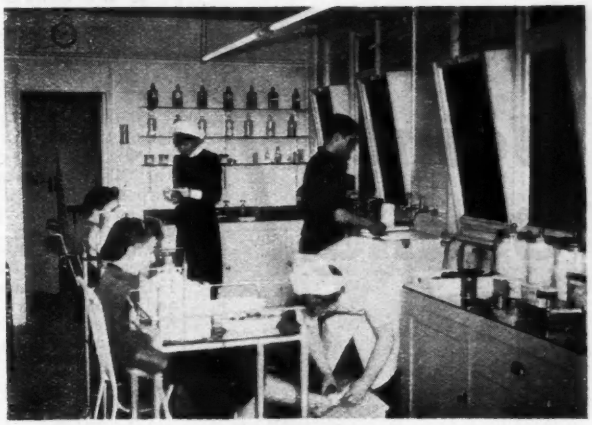
Dec. 19, 1943. "LUMEN."

Diary

Jan. 11.—N.G.C., C.E.B.: Gas Industry House, 2.15 p.m.
Jan. 11.—National Federation of Gas Coke Associations: General Committee, Gas Industry House, 9.45 a.m.



Sir William Beveridge visits the Gas Kitchen in the "When we build again" exhibition, which he opened in London under the aupices of the Town and Country Planning Association.



A fully-equipped Works Surgery is a much appreciated feature of the progressive welfare organization at Diamond Foundry, Luton (Radiation, Ltd.). An X-ray unit, artificial sunlight installation, and facilities for the prompt treatment of accidents are all provided free, and specialist visits by oculist, chiropodist, &c., are arranged. The Medical Officer attends three days a week, and there is an average of 100 to 130 visits each 24 hours, day and night.

Post-War Planning

A.M.C. Report

The expected report of the Association of Municipal Corporations on Post-war Planning of the Gas Industry is now published. It is pointed out that it is an interim report of a sub-committee appointed by a special committee of the Association, and, in accordance with instructions, the sub-committee propose to prepare a further report on the question of the public ownership of the Gas Industry.

Space this week does not permit us to publish the full text of this interesting document, which mainly takes the form of comment on the B.G.F. Report. The following points, however, appear to us important and significant.

The Association are of the opinion that if transmission undertakings are to be established on a large scale they should be publicly owned non-profit-making authorities.

Contrary to par. 71 of the B.G.F. Report, they think that many advantages would ensue from a general transfer of the Gas Industry to municipal ownership.

The holding company system has inherent possibilities of abuse, and it would be wrong for Parliament to enable gas corporations to purchase municipal undertakings compulsorily, or to enable gas corporations to acquire by compulsion a majority holding of voting capital in companies.

They consider that integration must only follow a review of the Industry by an independent body whose findings should be presented to Parliament for confirmation by statute, and that any legislation on those lines should be based upon three principles:

(*a*) That no local authority should be required to part with its undertaking unless definite and substantial benefit would accrue to consumers, and unless this result could not be obtained by any alternative method.

(*b*) That size should not be taken into account, but only "whether it can attain a reasonable standard of efficiency and be able to afford a cheap and abundant supply, etc.

(*c*) That in all cases where an integration scheme is not agreed to by all parties, it "should be provisional only, and should not be operative until confirmed by Act of Parliament."

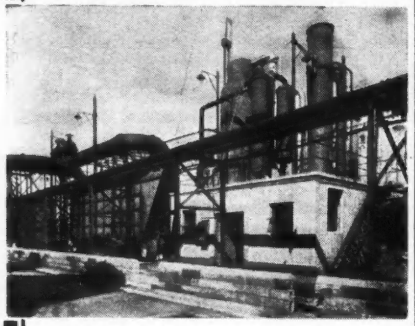
They repeat a resolution adopted by a General Meeting of the Association in 1942 in which it is maintained that public utilities should be owned and controlled by the public, but it is admitted that "in appropriate cases . . . the function of generation . . . might be separated from the function of distribution."

They put forward several reasons why the Gas Industry should be run as a social service "without financial gain," including the advantage that smoke abatement powers are already in the hands of the local authorities.

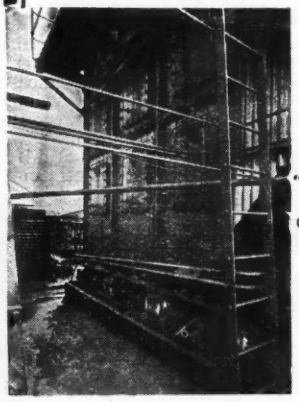
They are prepared to admit that the area controlled by a single local authority might not be a convenient or economic unit for the gas undertaking, but their remedies are (*a*) the present arrangement, in which one authority supplies neighbours; (*b*) joint ownership; (*c*) bulk supplies from one authority to its neighbours.

In the event of the Gas Industry being transferred to local authorities, these authorities should unite for the purpose of standardization, co-operation in research, and the training of personnel.

Every Joint Sound!



"Permac" Joints in a Gas Works.



"Permac" Joints in a Gas Works.

Ever since 1913 "PERMAC," the original Metal-to-Metal Jointing, has been holding up difficult joints like these in important Gas Works and on Coke Oven Plants all over the world. Equally suitable for any joint—steam, water, gas, oil — screw pipe or flange.

Send for particulars

Permac
METAL-TO-METAL JOINTING MATERIAL

Sole Manufacturers:

THOMAS & BISHOP LTD

(formerly of 37, Tabernacle Street, London, E.C. 2)

Temporary address:
39, Arthur Road, Wimbledon Park, London, S.W. 19

Products Prices—Stock and Shares

The London Market Dec. 27.

All Coal Tar Products are in good demand, and Pitch in the London area remains about 45s.

The new Coal Tar Products Prices Order, 1943 (S. R. & O. 1528), came into force on Nov. 15, fixing the prices at which Coal Tar Oils may be sold for various specified purposes. It also confirms the prices which may be charged for other Coal Tar Products under earlier Orders.

An Order entitled The Control of Toluene (No. 3) Order, 1943 (S. R. & O. 1943, No. 976), came into force on July 20, and introduced certain changes in the prices for different grades of Toluene.

There are no changes to report in the prices of Coal Tar Products.

The Provinces Dec. 27.

The average prices of gas-works products during the week were: Pitch and Crude Tar,* Toluole, naked, North, 90's, 1s. 11d. to 2s. 1d., pure, 2s. 7½d. (controlled by the Control of Toluene No. 3 Order, dated July 14, 1943, operative from July 20, 1943). Naphtha and Xylole controlled by the Coal Tar Naphtha and Xylole Order, 1943, dated May 31 (S. R. & O., 1943, No. 768), operative from June 1. Carbolic acid, 60's, naphthalene, anthracene, creosote oil (hydrogenation), coal tar oils (timber preservation, &c.), and strained anthracene oil controlled by the Coal Tar Products Prices Order, 1943, dated Oct. 20, 1943 (S. R. & O. 1943, No. 1528), operative from Nov. 15, 1943.

* In regard to pitch and crude tar prices we would ask readers to refer to the editorial note on p. 396 of the "JOURNAL" for Sept. 10, 1941.

Scotland Dec. 25.

Deliveries continue on a substantial scale. Refined tar*: Yield to Distillers is 4½d. per gallon *ex* Works, naked. Creosote oil: Timber preserving quality,* 5½d. to 6½d.; hydrogenation oil,* 5⅞d.; low gravity or virgin oil,† 7¼d. to 7½d.; benzol absorbing oil,* 6½d. to 8d. per gallon. Refined cresylic acid* is 3s. 6d. to 4s. 6d. per gallon *ex* Works, naked, according to quality. Crude naphtha†: 6½d. to 7d. per gallon. Solvent naphtha*: Basic prices delivered in bulk, 90/160 grade, 2s. 8d., and 90/190 Heavy naphtha, Unrectified, 1s. 10½d.; Rectified, 2s. 3d. per gallon. Pyridine†: 90/160 grade, 13s., and 90/140 grade, 15s. per gallon.

* Price controlled. † Uncontrolled.

The approach of the holiday reduced still further the volume of business last week, although the tone remained firm. Selected industrials continued in favour and prices showed an upward tendency, while Trinidad oil shares maintained their former support.

There were a few more transactions in the Gas Market and quotations with very few exceptions closed unchanged. The only feature was a rise of 1s. in Bombay shares. It will be seen that a large number of fixed-interest stocks in the Supplementary and Provincial Lists closed *ex div.*

The following price changes were made during the week:

OFFICIAL LIST

Bombay	25/—27/-	+1/-
Gas Light 4 p.c. Pref.	94—97	−1
South Metropolitan Ord.	84—87	+1

SUPPLEMENTARY LIST

Cheltenham 4 p.c. Deb. (*x.d.*)	95—100	Dec. 20
Guildford 4½ p.c. Red. Deb. (*x.d.*)	100—105	"
Newport (Mon.) 5 p.c. Deb. (*x.d.*)	110—115	"
Reading 4 p.c. Deb. (*x.d.*)	94—99	"
York 5 p.c. Red. Deb. (*x.d.*)	97—102	"

PROVINCIAL EXCHANGES

Bristol 1st 4 p.c. Deb. (*x.d.*)	100—102	Dec. 13
Ditto 2nd 4 p.c. Deb. (*x.d.*)	100—102	"
Ditto 5 p.c. Deb. (*x.d.*)	116—120	"
Chester 4 p.c. Cum. Pref. (*x.d.*)	80—82	"
Ditto 4 p.c. Pref. (*x.d.*)	80—82	"
Ditto 3½ p.c. Deb. (*x.d.*)	86—90	"
Ditto 4 p.c. Red. Deb. (*x.d.*)	97—99	"
Liverpool 3½ p.c. Red. Deb. (*x.d.*)	90—95	"
Ditto 4 p.c. Red. Deb. (*x.d.*)	101—103	"
Ditto 5 p.c. Red. Deb. (*x.d.*)	105—110	"
Newcastle 3½ p.c. Deb. (*x.d.*)	95½—96½	Dec. 20
Ditto 3½ p.c. Red. Deb. (*x.d.*)	98—100	"
Sheffield Ord.	137—140	+1

TRADE CARDS

FULL particulars of these spaces can be obtained on application to the Publishers. They are designed principally for the use of the firms whose display advertisements cannot be included owing to paper rationing.

VEE-REG VALVES
FOR BETTER VALVE SERVICE AT LESS COST!
ENGINEERING SPECIALISTS LTD.
114 THE AVENUE, BRONDESBURY PARK, LONDON, N.W. 6.

THE BRYAN DONKIN CO. LTD.
Gas-Works Plant Engineers, Chesterfield.
COMPRESSORS EXHAUSTERS VALVES
GAS GOVERNORS & REGULATORS
BOOSTERS

Arkoll
INSTRUMENTS
Gas Flow Recorders and Indicators
Pressure and Vacuum Recorders and Indicators
Full Scale or Inclined Gauges
WALKER, CROSWELLER & CO. LTD.
CHELTENHAM, GLOS. Cheltenham 5172

THOMAS GLOVER & CO., LTD.
Edmonton, London, N. 18, and Branches. Established in 1844.
. . . . FOR RELIABILITY IN METERS.

C. & W. WALKER LTD.
Midland Ironworks, Donnington, Wellington, Shropshire. T/N Wellington-Shropshire 12.
Makers of Gas-Works Plant of all descriptions.

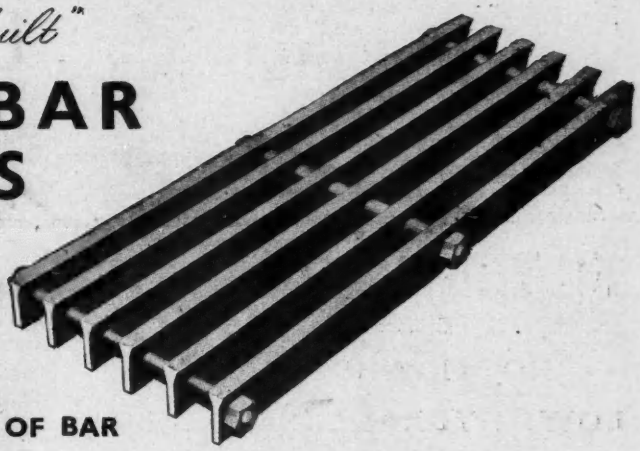
WEST'S GAS IMPROVEMENT CO. LTD.
Miles Platting, Manchester 10. T/N Collyhurst 2961 (5 lines). T/A Stoker, Manchester. London Office: Columbia House, Aldwych, W.C.2. T/N Holborn 4108-9. T/A Wesgascoe Estrand.
WEST'S CARBONIZING PLANTS.
GLOVER-WEST VERTICALS. WESTVERTICAL CHAMBERS.

Address your orders and enquiries for
HUMIDINE
The unique anti-corrosion paint for gasholder cuppings, etc.
To the sole manufacturers
ASPINALLS (PAINTS) LIMITED
CARLETON — SKIPTON — YORKS

GREENING'S

"precision built"

PROFILE BAR SCREENS



Built from HARD STEEL for HEAVY DUTIES

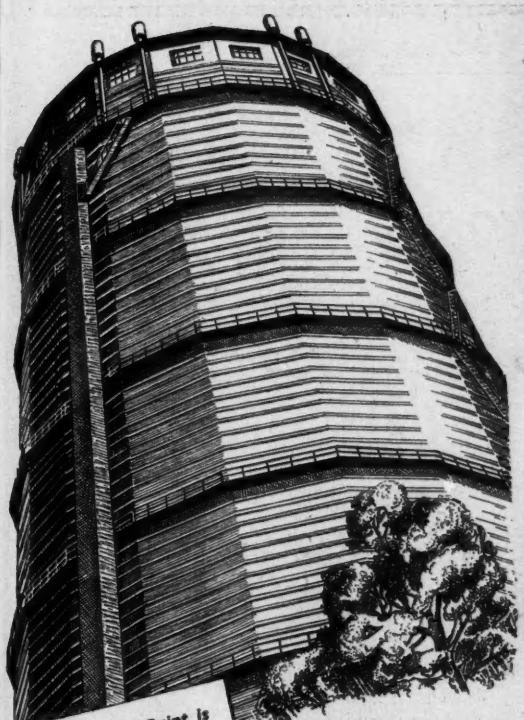
IN FIVE STANDARD DEPTHS OF BAR

SPACERS and CROSS RODS in HEAVY GAUGES

N. GREENING & SONS, LTD., WARRINGTON, LANCS.
Makers of precision Screening Surfaces since 1709

Telephone: Warrington 1901

XG80



Give GASHOLDERS and other steel structural work the best possible

PROTECTION from RUST *and ATMOSPHERIC CORROSION*

Owing to its exceptional rust-inhibiting properties, "Ferrodor" Metal Protection affords great economy in labour and reduces maintenance costs to the minimum

FERRODOR Regd.

METAL PROTECTION

"Ferrodor" Paint is still available and permitted for essential maintenance work

SOLE MAKERS **GRIFFITHS BROS & Co LONDON Ltd**

PAINT ENAMEL AND INSULATING VARNISH SPECIALISTS

MACKS ROAD, BERMONDSEY, LONDON, S.E. 16 Telephone BERmondsey 1151

THE GAS METER COMPANY LTD.

FOR ALL KINDS OF METERS

Absolutely trouble-free meter service combining precision of manufacture, quality, accuracy of registration, and above all, dependability.

★ *We have only been able to secure a very limited number of Trade Diaries for 1944, copies of which we shall be pleased to forward to customers on application. To comply with Government regulations, applications must be accompanied by one penny stamp. If some requests cannot be complied with, the penny stamp will be given to the Red Cross fund to save paper, postage and correspondence.*

238 KINGSLAND ROAD, LONDON, E.2. Also at OLDHAM and MANCHESTER

FILTRATION PLANT

Characteristics

NO MOVING PARTS

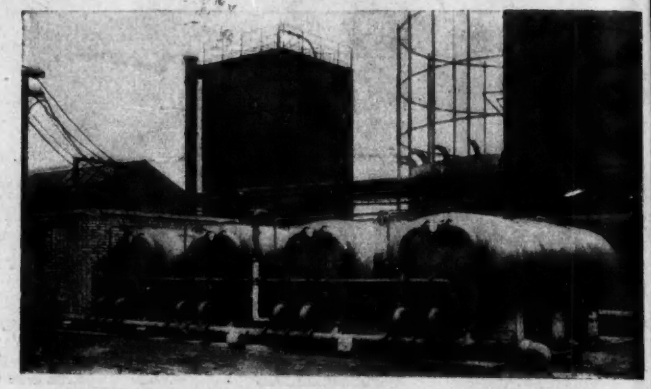
LOW HYDRAULIC LOSSES

Repeat orders testify to satisfactory service

Write for List 2446.

Pulsometer Engineering Co. Ltd.

READING



Filtration Plant in Gas Works treating 60,000 gallons of water per hour

PUMPS

FOR GAS WORKS

Fig. 705. "SINGLE-RAM" STEAM-PUMP.

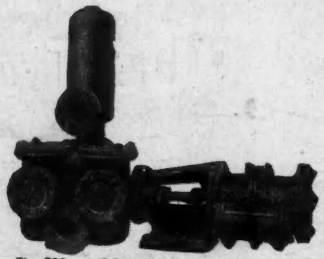


Fig. 598. "CORNISH" STEAM-PUMP FOR BOILER FEEDING, &c.

TRADE MARK LION

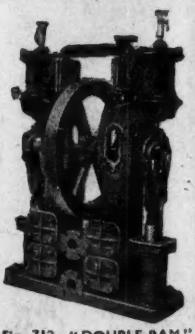


Fig. 712. "DOUBLE-RAM" STEAM-PUMP.

Fig. 680. "RELIABLE" PUMPING ENGINE FOR THIN TAR, AMMONIACAL LIQUOR, BENZOLE LIGHT, OILS AND WATER

Fig. 685. "RELIABLE" STEAM-PUMP FOR TAR AND ALL THICK FLUIDS.

Please apply for Catalogue No. 8.

JOSEPH EVANS & SONS (WOLVERHAMPTON) LTD

Wires: "Evans, Wolverhampton." CULWELL WORKS, WOLVERHAMPTON. 'Phones: Wolverhampton 20864, 20865.

London Office: KERN HOUSE, 36 & 38, KINGSWAY, W.C.2. Wires: "Dryosbo, Westcent." 'Phone: Holborn 1091.

Printed by Straker Brothers, Ltd., London, E.C.2, for WALTER KING, LIMITED, 11, BOLT COURT, FLEET STREET, LONDON, E.C.4.—Wednesday, December 29, 1943.